

WHAT IS CLAIMED IS:

1. Seed of cotton line designated DP 494 RR, representative seed of said line having been deposited under ATCC Accession No. PTA-\_\_\_\_\_.
2. A cotton plant, or a part thereof, produced by growing the seed of claim 1.
3. A tissue culture of regenerable cells produced from the plant of claim 2.
4. Protoplasts produced from the tissue culture of claim 3.
5. The tissue culture of claim 3, wherein cells of the tissue culture are from a tissue selected from the group consisting of leaf, pollen, embryo, root, root tip, anther, pistil, flower, seed, boll and stem.
6. A cotton plant regenerated from the tissue culture of claim 3, said plant having all the morphological and physiological characteristics of line DP 494 RR, representative seed of said line having been deposited under ATCC Accession No. PTA-\_\_\_\_\_.
7. A method for producing an F1 hybrid cotton seed, comprising crossing the plant of claim 2 with a different cotton plant and harvesting the resultant F1 hybrid cotton seed.
8. A hybrid cotton seed produced by the method of claim 7.
9. A hybrid cotton plant, or parts thereof, produced by growing said hybrid seed of claim 8.
10. A method for producing a male sterile cotton plant comprising transforming the cotton plant of claim 2 with a nucleic acid molecule that confers male sterility.
11. A male sterile cotton plant produced by the method of claim 10.
12. A method of producing an herbicide resistant cotton plant comprising transforming the cotton plant of claim 2 with a transgene that confers herbicide resistance.
13. An herbicide resistant cotton plant produced by the method of claim 12.
14. The cotton plant of claim 13, wherein the transgene confers resistance to an herbicide selected from the group consisting of: imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.
15. A method of producing an insect resistant cotton plant comprising transforming the cotton plant of claim 2 with a transgene that confers insect resistance.

16. An insect resistant cotton plant produced by the method of claim 15.
17. The cotton plant of claim 16, wherein the transgene encodes a *Bacillus thuringiensis* endotoxin.
18. A method of producing a disease resistant cotton plant comprising transforming the cotton plant of claim 2 with a transgene that confers disease resistance.
19. A disease resistant cotton plant produced by the method of claim 18.
20. A method of producing a cotton plant with modified fatty acid metabolism or modified carbohydrate metabolism comprising transforming the cotton plant of claim 2 with a transgene encoding a protein selected from the group consisting of stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme.
21. A cotton plant produced by the method of claim 20.
22. A cotton plant, or part thereof, having all the physiological and morphological characteristics of the line DP 494 RR, representative seed of said line having been deposited under ATCC Accession No. PTA-\_\_\_\_\_.
23. A method of introducing a desired trait into cotton line DP 494 RR comprising:
  - (a) crossing DP 494 RR plants grown from DP 494 RR seed, representative seed of which has been deposited under ATCC Accession No. PTA-\_\_\_\_\_, with plants of another cotton line that comprise a desired trait to produce F1 progeny plants, wherein the desired trait is selected from the group consisting of male sterility, herbicide resistance, insect resistance and disease resistance;
  - (b) selecting F1 progeny plants that have the desired trait to produce selected F1 progeny plants;
  - (c) crossing the selected progeny plants with the DP 494 RR plants to produce backcross progeny plants;
  - (d) selecting for backcross progeny plants that have the desired trait and physiological and morphological characteristics of cotton line DP 494 RR listed in Table 1 to produce selected backcross progeny plants; and

- (e) repeating steps (c) and (d) three or more times in succession to produce selected fourth or higher backcross progeny plants that comprise the desired trait and all of the physiological and morphological characteristics of cotton line DP 494 RR listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

24. A plant produced by the method of claim 23, wherein the plant has the desired trait and all of the physiological and morphological characteristics of cotton line DP 494 RR listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

25. The plant of claim 24 wherein the desired trait is herbicide resistance and the resistance is conferred to an herbicide selected from the group consisting of: imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

26. The plant of claim 24 wherein the desired trait is insect resistance and the insect resistance is conferred by a transgene encoding a *Bacillus thuringiensis* endotoxin.

27. The plant of claim 24 wherein the desired trait is male sterility and the trait is conferred by a cytoplasmic nucleic acid molecule that confers male sterility.